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ABSTRACT

A study described the 1989-90 Chapter 1 Developer/Demonstration Program, Learning to Read through the Arts (LTRTA), and evaluated the effectiveness of its implementation. The program offers intensive reading and reading-oriented arts instruction to Chapter 1-eligible students. Of the 797 students served by the program, 98 were ungraded special education students and 699 were in grades 2 through 6. Of this latter group, 37 were limited English proficient (LEP) students, 561 were general education students, 68 were Wednesday general education students, and 33 students were in temporary housing at 5 sites in New York City (in Manhattan, the Bronx, Brooklyn, and Queens). Reading teachers provided an individualized, diagnostic, prescriptive approach to reading. Artist teachers stressed listening, speaking, reading, and writing in the arts-oriented workshops. Data consisted of interviews with program staff, observations of program sites and classes, analyses of standardized and criterion-referenced tests, and holistically scored writing tests. Results indicated that: (1) the program was implemented as proposed and that the activities were conducted in a professionally competent manner; (2) general education students in all grades except grade 3 made statistically significant mean gains from pretest to posttest on standardized reading tests; (3) 76% of the special education students mastered three or more additional reading skills on the posttest, and 84% of the LEP students mastered five or more additional reading skills; and (4) all students made statistically significant mean gains on the holistically scored writing tests. (Ten tables and nine figures of data are included.) (RS)

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# OREA Report

## CHAPTER 1 DEVELOPER/DEMONSTRATION PROGRAM
## LEARNING TO READ THROUGH THE ARTS
## 1989-90

CS 010 677

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# EXECUTIVE SUMMARY

## BACKGROUND

The Chapter 1 Developer/Demonstration Program, Learning to Read Through the Arts (L.T.R.T.A.), offers intensive reading and reading-oriented arts instruction to Chapter 1-eligible students. During the 1989-90 school year, the program served 98 ungraded special education students and 699 students in grades two through six; of these 37 students were limited English proficient (LEP), 561 were in general education classes, 68 were Wednesday general education students, and 33 were Hotel children. In 1989-90, the program was funded through Chapter 1 of the Education Consolidation and Improvement Act (E.C.I.A.) at $1,047,000.

L.T.R.T.A. reading teachers, artist-teachers, and participating classroom teachers work as a team to improve students' reading and writing skills and to increase their interest in the arts. Reading teachers provide an individualized, diagnostic, prescriptive approach to reading. Artist teachers stress listening, speaking, reading, and writing in the arts-oriented workshops. The experience of learning to read through the arts helps build students' self-confidence and improve students' self-image.

Program activities were based at five sites in Manhattan, the Bronx, Brooklyn, and Queens. The three central sites in Brooklyn, Bronx, and Queens served students from these boroughs. The Manhattan sites were located at P.S. 11 and P.S. 15. These sites were school-based in that L.T.R.T.A. only served students from these schools. The program director, two staff developers, and one office aide served all sites from the project office at P.S. 9 in Manhattan.

## PROGRAM OBJECTIVES

The objectives for the 1989-90 L.T.R.T.A. program follow:

- General education students were expected to make statistically significant mean gains on standardized reading tests.

- Sixty percent of the LEP students were expected to master at least five additional reading skills on the Wisconsin Design Skills Development Test from pretest to posttest.

- Sixty percent of the special education students were expected to master at least three additional reading skills on the Wisconsin Design Skills Development Test from pretest to posttest.

- All students were expected to achieve statistically significant mean gains from pretest to posttest on holistically scored writing samples.

FINDINGS

The findings of this evaluation are based on multiple data sources including interviews with program staff, observations of program sites and classes, analyses of standardized and criterion-referenced reading tests, and holistically scored writing tests.

A review of program documents, observation of program activities, and interviews with program and participating school staff indicate that L.T.R.T.A. was implemented as proposed. All proposed instructional, training, testing and monitoring activities were conducted as specified and in a professionally competent manner. The program was well organized and effective in all program sites, program staff were observed to be professional and collegial, and students were engaged and enthusiastic.

The evaluation of student achievement on reading and writing tests reveals that all program objectives for student improvement in reading and writing were met or surpassed, with one exception --the performance of third grade students in the general education curriculum on the Metropolitan Achievement Test (MAT).

General education students in all grades except grade three made statistically significant mean gains from pretest to posttest on standardized reading tests, meeting the program objective. For students in fifth and sixth grade, effect sizes were moderate. It must be noted that for students in third, fourth, and sixth grades, all mean pretest scores were above the State Education Department's 35.8 N.C.E. threshold for educationally disadvantaged students.

On the Wisconsin Design Skills Development Test, 76 percent of special education students mastered three or more additional reading skills on the posttest that they had not mastered on the pretest, and 84 percent of LEP students mastered five or more additional reading skills. Thus, the program surpassed its objectives for reading achievement for special education and LEP students.

On the holistically scored writing tests, special education students and general education students in all grades made statistically significant mean gains and thus met the program objectives. These gains represented large effect sizes and were educationally meaningful. The overall mean gains for LEP students were statistically significant and educationally meaningful.

RECOMMENDATIONS

L.T.R.T.A. has benefited from successive program evaluations since its inception, and test score gains are consistently positive in student achievement. The following recommendations are suggested to further refine the program's components, to improve program operations, and to highlight new areas of evaluation and research inquiry.

- The program should continue its innovative curriculum of integrating reading and the arts and expand, if possible, to serve an even larger population of students.

- A year-to-year sustained effects study program participants should be instituted. A follow up study of program impact on student self-esteem should be considered.

- An in-depth analysis to identify the impact of art education on student achievement and student affect appears warranted.

- The issue of non-annualized staff may warrant continued exploration.

- L.T.R.T.A. staff should work with participating schools to develop ways of selecting general education students who better meet the Chapter I eligibility requirements.

## ACKNOWLEDGEMENTS

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Additional copies of this report are available by writing to:

Mr. Ron Miller
Office of Research, Evaluation, and Assessment
110 Livingston Street, Rm 730
Brooklyn, N. Y. 11201

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# I. INTRODUCTION

## PROGRAM PURPOSE

The Chapter 1 Developer/Demonstration Program, Learning to Read Through the Arts (L.T.R.T.A.), offers intensive reading and reading-oriented arts instruction to Chapter 1-eligible students. The program employs visual and performing arts as vehicles for reading instruction, and uses listening, speaking and writing approaches to reading through language experience.

## STUDENT ELIGIBILITY

Eligibility for Chapter 1 services is based upon attendance and achievement criterion. Students must score below a designated cut-off point on State-mandated standardized reading tests and reside within targeted neighborhoods. In addition, the Chapter 1 Evaluation Reporting System specifies that eligible students may also be selected for Chapter 1 services on the basis of classroom performance. Most children classified as limited English proficient (LEP) and many special education students who are excluded from standardized testing participate in L.T.R.T.A. based on teacher ratings or classroom performance.

## STUDENTS SERVED

Table 1 depicts the student distribution for L.T.R.T.A. in 1989-90 by grade. Of the 797 students served, 98 were ungraded special education students and 699 students were in grades two through six. Of this latter group, 37 were LEP students, 561 were in general education classes and met one day a week, 68 were general education students who met one day a week, and 33 were students in temporary housing.

TABLE 1

Number and Percentage of Students by Grade Participating in the L.T.R.T.A. Program: 1989-90

| Grade | Number of Students | Percentage of Students |
|---|---|---|
| 2 | 61 | 7.7 |
| 3 | 44 | 5.5 |
| 4 | 278 | 34.9 |
| 5 | 275 | 34.5 |
| 6 | 41 | 5.1 |
| Ungraded[a] | 98 | 12.3 |
| Total | 797 | 100.0 |

[a]Special education students are not placed by grade.

- More than two-thirds of all students were in the fourth and fifth grades.
- Special education students comprised approximately one-eighth of the student population.

## PROGRAM OBJECTIVES

The 1988-89 L.T.R.T.A. program had four objectives:

- General education students were expected to make statistically significant mean gains on standardized reading tests.
- Sixty percent of the LEP students were expected to master at least five additional reading skills on the Wisconsin Design Skills Development Test from pretest to posttest.
- Sixty percent of the special education students were expected to master at least three additional reading skills on the posttest of the Wisconsin Design Skills Development Test from pretest to posttest.
- All students were expected to show statistically significant mean gains from pretest to posttest on holistically scored writing samples.

## PROGRAM EVALUATION

The program evaluation conducted by the Office of Research, Evaluation, and Assessment/Instructional Support Evaluation Unit (OREA/I.S.E.U.) had two purposes: to describe program implementation and to assess its impact on student achievement in reading and writing. Multiple data sources were utilized including:

- reviews of program documents and materials;
- interviews with program staff to gather information about program organization and funding, the curriculum, and staff development activities;
- analyses of data retrieval forms that report information about grade placement and students' attendance;
- observations of teacher/student interaction during instruction; and
- analyses of students' scores on standardized and criterion-referenced reading tests and holistically scored writing tests.

SCOPE OF THE REPORT

L.T.R.T.A. program organization and implementation are described in Chapter II. Student attendance and academic achievement are discussed in Chapter III. Conclusions and recommendations are presented in Chapter IV.

## II. PROGRAM ORGANIZATION AND IMPLEMENTATION

### PROGRAM BACKGROUND AND FUNDING

The Learning to Read Through the Arts (L.T.R.T.A.) program operates under the auspices of the Office of Professional Development and Leadership Training under the Deputy Chancellor for Instruction and Development of the New York City Board of Education. The program has been in operation since 1971 and has been recognized as an exemplary program at the national, state, and local levels. In 1989-90, the program was funded through Chapter 1 of the Education Consolidation and Improvement Act (E.C.I.A.) at $1,047,000.

### PROGRAM ORGANIZATION

The program was implemented for a 32-week cycle from October 1989 to June 1990 with program activities based at five sites: two in Manhattan ("school-based" sites), and one each in the Bronx, Brooklyn, and Queens ("boroughwide" sites).

Project funds supported a project director and two teacher trainers based at the central L.T.R.T.A. offices at P.S. 9 in Manhattan. At each program site, local operations were managed by a site coordinator who also served in an instructional (arts or reading) capacity. Figure 1 depicts L.T.R.T.A. professional staffing in 1989-90.

L.T.R.T.A. reading teachers and artist-teachers work as a team with participating classroom teachers to improve students' reading and writing skills and to increase their interest in the arts. Reading teachers provide an individualized, diagnostic, and prescriptive approach to reading, while artist-teachers

FIGURE 1

L.T.R.T.A. Professional Staffing: 1989-90

| Site | Reading Teacher | Art Teacher | Other |
|---|---|---|---|
| Program Office | | | Program Director (1)<br>Teacher Trainers (2) |
| Bronx | 2 | 2 | |
| Brooklyn | 1 | 3 | |
| Queens | 2 | 2 | |
| Manhattan I | 1 | 1 | |
| Manhattan II | 1 | 1 | |

- During 1989-90, the L.T.R.T.A. Program was centrally staffed by a project director and two teacher trainers who supported seven reading teachers and nine arts professionals in five sites throughout New York City.

stress listening, speaking, reading, and writing skills through arts-oriented workshops. Classroom teachers reinforce the skills gained through L.T.R.T.A. when students return to their home schools.

Most students were bused to the three boroughwide program sites for a four-hour session two days per week for 28 weeks, for a total of 56 sessions. Students from three schools were bused to the boroughwide sites one day a week for 32 weeks. At the Manhattan sites, students attended L.T.R.T.A. sessions one full day each week, for a total of 29 sessions. Table 2 shows the distribution of participating students at the L.T.R.T.A. sites during 1989-90.

PROGRAM IMPLEMENTATION

An independent evaluator visited all L.T.R.T.A. sites in spring 1990 to observe program implementation and interview reading and artist-teachers, cooperating classroom teachers, and administrators. These observations and interviews provided information about the physical appearance of program sites; curriculum content; teaching methodology, a team approach to teaching; congruence between L.T.R.T.A. activities and classroom instruction; parental involvement activities; L.T.R.T.A. field trips; and professional development.

Appearance of Program Sites

Program buildings were clean and well-maintained and classrooms were well-illuminated, adequately heated and ventilated, and equipped with shelves, storage lockers, and moveable furniture. All sites displayed vocabulary lists, art terms, synonym-antonym charts, student tests and compositions,

Table 2

Distribution of Students at Participating L.T.R.T.A. Program Sites: 1989-90

| Boroughwide Sites | | | | | | School-based Sites | | | |
|---|---|---|---|---|---|---|---|---|---|
| Schools in the Bronx | # Students | Schools in Brooklyn | # Students | Schools in Queens | # Students | Manhattan I | # Students | Manhattan II | # Students |
| P.S. 1 | 32 | P.S. 16[a] | 35 | P.S. 40 | 24 | P.S. 15 | 127 | P.S. 11 | 120 |
| P.S. 29[a] | 66 | P.S. 116 | 27 | P.S. 132 | 30 | | | | |
| P.S. 78 | 16 | P.S. 135 | 26 | P.S. 134 | 30 | | | | |
| P.S. 91 | 26 | P.S. 270 | 30 | P.S. 171 | 33 | | | | |
| CES 70 | 31 | P.S. 309 | 30 | P.S. 223[a] | 84 | | | | |
| | | P.S. 398 | 30 | | | | | | |

[a]Students from these schools were bused to the boroughwide site once a week.

- The Bronx site serviced students from five different schools, the Brooklyn site serviced students from six different schools, the Queens site serviced students from five different schools, and the Manhattan sites located at two schools serviced only students for those schools. The program served 171 students from the Bronx, 178 from Brooklyn, 201 from Queens, and 247 from Manhattan.

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and teacher-made materials. Student art work was exhibited in classrooms and throughout the school. Works included self-portraits, paintings, murals, printing blocks, blueprints, models, and pottery.

Curriculum

All participating students attended reading and reading-oriented arts workshops, with special education and LEP students using the same curriculum as general education students, but at a slower pace. Students were usually divided into two groups, alternating art and reading lessons. By switching classes at the end of each lesson, the team-teaching concept was fostered as reading teachers and artist-teachers focused on the same or similar themes through coordinated lesson plans.

As part of each reading workshop, teachers used creative visual materials such as pictures of Amish quilts that related to the site's general arts theme (e.g., "New York, an Ethnic Quilt"). Individual and small-group reading workshops focused on comprehension, reasoning, problem-solving, the appreciation of literature, and reading for information and pleasure. Language skills instruction included word-identification skills, specialized vocabulary used on norm-referenced tests, and writing.

Skill sheets were developed by the L.T.R.T.A. staff for use with the cooperating school-based teachers and their classes. Classroom teachers integrated the skill sheets with commercial materials to create lessons and activities based on themes, topics, and content generated by the reading oriented arts workshops.

Teaching Methodology: Integrating Reading with Art

Art holds the students' interest. As they become more confident and motivated through art projects, they use more advanced vocabulary, and overcome their original frustrations. Art provides the contextual experience for the reading activity to take hold, and through a hands-on approach with art projects, students learn reading without realizing it.

Art is a critical starting point from which children learn perseverance, problem solving, and new ways of thinking. Reading lessons are based on what the art teachers do, and attempts are made to dovetail the reading and the arts as much as possible. Reading becomes the tool for the problem solving process which culminates in the product of art, and art establishes an experiential background for the reading, which many children might otherwise lack.

Often an art project is brought to the reading class where it serves as the centerpiece for a creative writing exercise. Students learn to analyze an object through the use of a selected art vocabulary, and they remember vocabulary and concepts better as a result of the hands on, concrete approach. The art class involves writing: students create dictionaries, keep journals of their activities, and record questions regarding field trips.

For example, a project that involved quilt making began by teaching patterns and the corresponding vocabulary and abstract concepts regarding shapes and directions (horizontal, etc.). In addition to vocabulary development, the children learned measurement techniques, problem solving, and information about

Amish culture. The reading teacher expanded on the art project by engaging the students with the history and culture of quilts and quilt-making.

At another L.T.R.T.A. site, the main theme, "New York, an Ethnic Quilt," involved photographic portraits of each student, and a "photo-essay" of the neighborhood, or another aspect of the "ethnic quilt." Each student designed a personal portrait based on an emotion. Students also learned vocabulary related to the camera, photography techniques, and the development of photos. The camera and photo techniques were taught in tandem with literature related to the theme to connect the project with reading skills. Follow-up activities included writing poetry about the emotions explored through the photography, and field trips.

The "Team" Approach to Teaching

To ensure that reading and the arts were smoothly integrated with L.T.R.T.A. themes, each site held planning meetings at the beginning of the school year and then on a weekly basis for staff to discuss problems, strategies, and training needs. Staff also generally met informally on a daily basis to share ideas concerning ongoing projects. Working as a team, the reading teachers helped the art teachers with suggestions and vice versa, with everyone using the collective expertise very cooperatively. The process worked because it brought together many different people with different ideas and different ways of approaching the projects.

The L.T.R.T.A. process provides for built-in dialogue between instructional staff which promotes the success of the

program, and is essential to its success. As a result, L.T.R.T.A. teachers don't teach in a vacuum but work together using the thematic approach.

The Congruence between Classroom and L.T.R.T.A. Instruction

In order for children's classroom instruction to be effectively supplemented by L.T.R.T.A. activities, there must be congruence between the instructional content in both settings. Required staff training, interdisciplinary instruction, and participation by classroom teachers in L.T.R.T.A. activities were designed to bring about this congruence. The L.T.R.T.A. lesson plans are provided to classrooms in advance, and can be altered if the teacher has specific needs. Vocabulary is shared and expected to be used at the home school. Teachers also inform the L.T.R.T.A. staff of the curriculum used in their classrooms, and share personal information of importance about the children.

Many classroom teachers set up bulletin boards for vocabulary and art projects, and utilize the skill sheets generated at L.T.R.T.A. It is expected that communication between the L.T.R.T.A. staff and the classroom teacher will take place, although some participating teachers have greater interest than others. Most important, the carryover to the classroom depends on the teacher's strengths in reading or the arts.

Parent Involvement

The Parents' Advisory Council formalizes the role of the parents in the program through five meetings a year, attended by L.T.R.T.A. staff at the participating schools. For varied

reasons, attendance tends to be low. However, those who do attend come away excited, and acknowledge that their children are excited by the program.

Parents are invited to performances and on field trips, and receive a project newsletter. Since parent attendance is greatest during performances, L.T.R.T.A. staff use this opportunity to confer informally with parents.

L.T.R.T.A. Parent Advisory Council meetings for parents of participants at each project site were conducted by the site coordinator and included workshops, discussions, and lectures. Parents observed and learned about the program and made suggestions for improvement, learned ways to help their children learn at home, developed an understanding of the interrelated processes of reading, participated in field trips, improved communication with children, and learned how children's reading problems are diagnosed and corrected.

Figure 2 presents a summary of PAC meetings implemented at each site from October 1989 through May 1990. As evidenced by meeting minutes, parents expressed enthusiasm and a high level of satisfaction for the program.

L.T.R.T.A. Field Trips

Field trips were implemented as part of the L.T.R.T.A. program to integrate experiences into a total learning environment and included visits to cultural resources, art museums, children's museums, performances, historical sites, and libraries. Figures 3 through 6 summarize field trips during 1989-90.

Figure 2

Parent Advisory Council (PAC) Meeting Summary: 1989-90

| L.T.R.T.A. Site | # Meetings Held |
|---|---|
| Bronx | 2 |
| Brooklyn | 5 |
| Manhattan I | 5 |
| Manhattan II | 3 |
| Queens | 6 |
| TOTAL | 21 |

- A total of 21 PAC meetings were conducted in five L.T.R.T.A. sites during 1989-90.

Manhattan II Site Field Trips

Seven field trips implemented for the Manhattan II Site January, 1989 through June, 1990 included multiple visits to the Museum of the City of New York; the Metropolitan Museum of Art; the Brooklyn Museum; the Museo del Barrio; Federal Hall and to the National Society of Colonial Dames.

Professional Development

The major objective of professional development was to share educational information which would enable staff to implement the program successfully. The project director, professional developers, site coordinators, and/or external consultants provided training for staff teachers and classroom teachers during 1989-90.

Fourteen professional development sessions were conducted by the L.T.R.T.A. Project Director and external consultants to integrate a multi-sensory, experiential art program with a diagnostic/prescriptive reading program. Training focused on L.T.R.T.A. methodology of using concrete, hands-on (nonverbal) activities to develop abstract (verbal) abilities together with reading and writing skills. Figure 7 presents summary information about these training activities.

Figure 3

Bronx Site Field Trip Summary: 1990

| Date | Destination | Participating School |
|---|---|---|
| 1/90 | Bronx Museum of the Arts | P.S. 1 |
| 3/90 | Bronx Museum of the Arts | P.S. 29 |
| | | CES 70 |
| | | P.S. 78 |
| | | P.S. 91 |
| 3/90 | Metropolitan Museum of Art | P.S. 1 |
| | | P.S. 29 |
| | | CES 70 |
| | | P.S. 78 |
| | | P.S. 91 |
| 5/90 | Bronx Botanical Gardens | P.S. 29 |
| 5/90 | Museum of Natural History | P.S. 29 |
| 6/90 | New York Historical Society | P.S. 1 |
| | | P.S. 29 |

- Six field trips were made to three museums, the Bronx Botanical Garden, and to the Historical Society.

Figure 4

Brooklyn Site Field Trip Summary: 1989-1990

| Date | Destination | Participating School |
|---|---|---|
| 11/89 | Alice Austen House | L.T.R.T.A. students |
| 11/89 | Library series of 4 visits | P.S. 270 |
| 1/90 | Whitney Museum | L.T.R.T.A. students |
| 1/90 | Brooklyn Academy of Music | P.S. 309 |
| | | P.S. 270 |
| 1/90 | Brooklyn Museum | P.S. 135 |
| 2/90 | Staten Island Chidren's Museum | P.S. 209 |
| | | P.S. 398 |
| 2/90 | International Center for Photography | P.S. 270 |
| 2/90 | Federal Hall | P.S. 116 |
| | | P.S. 135 |
| 4/90 | Alice Austen House | P.S. 270 |
| 4/90 | International Center for Photography | P.S. 309 |
| 4/90 | Center for African Art | P.S. 116 |
| | | P.S. 135 |
| 4/90 | Museum of American Folk Art | P.S. 398 |
| 5/90 | The Spice of America Performance | P.S. 135 |
| 6/90 | Performance | P.S. 309 |

- Seventeen is arrest field trips included trips to the public library, five museums, one historical site, and to the Brooklyn Academy of Music.

Figure 5

Manhattan I Site Field Trip Summary: 1989-1990

| Date | Destination | Participating Grade |
|---|---|---|
| 10/89 | Federal Hall (2 visits) | 3 and 4<br>2 and 3 |
| 12/89 | Metropolitan Museum of Art | 3 and 4 |
| 1/90 | Museum of City of New York (2 visits) | 2 and 3 |
| 2/90 | National Society of Colonial Dames (2 visits) | 3 and 4 |

- Seven field trips scheduled for the Manhattan I Site included multiple trips to museums and historical sites.

Figure 6

Queens Site Field Trip Summary: 1989-1990

| Date | Destination | Participating Grade/School |
|---|---|---|
| 10/89 | New York Aquarium (2 visits) | Grades 4/5 |
| 11/89 | Noguchil Museum (2 visits) | Special Education |
| 1/90 | Whitney Museum (2 visits) | Special Education; Grade 5/P.S. 223 |
| 1/90 | Danceware- Dance Workshop | Grades 4/5 |
| 2/90 | Whitney Museum (4 visits) | Special Education; Grades 4/5 |
| 3/90, 5/90 | The Cloisters (2 visits) | Special Education; Grade 5/P.S. 223 |
| 3/90 | Cooper Hewitt Museum | Grade 5 |
| 3/90, 5/90 | Metropolitan Museum of Art (2 visits) | Special Education |
| 3/90, 5/90 | South Street Seaport Museum (2 visits) | Special Education; Grade 5/P.S. 132 |

- Eighteen field trips were conducted for program participants from October 1989 through May 1990.

Figure 7

L.T.R.T.A. Site Staff Development and Training Meeting Summary: 1989-90

| Date | Agenda | Site | # Attending |
|---|---|---|---|
| 9/89 | Planning Session | P.S. 9 | 11 |
| 9/89 | Curriculum Distribution Meeting (2 Sessions) | P.S. 9 | 11 |
| 10/89 | Staff Development Design | P.S. 9 | 5 |
| 11/89 | Administrative Matters | P.S. 9 | 7 |
| 12/89 | Course of Study & Reading Activities | P.S. 9 | 11 |
| 12/89 | Demonstration Lessons | P.S. 9 | 11 |
| 12/89 | Museum of the City of New York Curriculum Planning Workshop | Museum of the City of New York | N/A |
| 1/90 | Integrating Curriculum Workshop | Teachers College | N/A |
| 4/90 | Staff Development Network | P.S. 9 | 11 |
| 4/90 | School Based Management Workshop | P.S. 9 | 11 |
| 5/90 | L.T.R.T.A. Conference | P.S. 9 | N/A |
| 5/90 | Project Success Enrichment Training: Carolyn Bronson | P.S. 9 | 11 |
| 6/90 | Conference for Educational Enrichment Network | P.S. 9 | N/A |

In addition to the training activities presented in Figure 7, L.T.R.T.A. staff participated in weekly professional development workshops conducted by each site coordinator. On a monthly basis, a staff developer visited each site, the program director conducted a workshop at each site, and the staff from each site attended a professional development meeting at the program office in Manhattan.

L.T.R.T.A. Professional Development for Participating Teachers

At the Bronx, Brooklyn, and Queens sites, a series of 27 professional development workshops was conducted by the site staff for the cooperating school teachers. At the Manhattan school-based L.T.R.T.A. sites, 28 workshops were conducted for the cooperating teachers from each school, P.S. 11 and P.S. 15.

These sessions included the following topics:

- L.T.R.T.A. methodology for a total art and total reading program;
- designing curriculum to meet the needs of individual programs;
- the role of the classroom teacher;
- strategies for class discipline;
- planning field trips, special events, and exhibitions;
- observation of different L.T.R.T.A. programs;
- designing multi-cultural lessons;
- the "Discipline-Based Art Education Approach";
- review of Bloom's Taxonomy and critical thinking skills;
- review of school based management;
- diagnostic/prescriptive approaches to teaching reading;

- review of the whole language approach;
- critical evaluation;
- semantic mapping;
- peer coaching;
- student progress reports;
- self-esteem in the art of reading; and
- program evaluation and future recommendations.

Figures 8 and 9 depict additional staff training highlights at each L.T.R.T.A. site.

STAFF PERCEPTIONS OF THE PROGRAM

L.T.R.T.A. staff and classroom teachers responded to surveys regarding various program implementation issues.

Staff Survey

Of the ten L.T.R.T.A. staff who responded to the staff survey, eight had five or more years experience with the L.T.R.T.A. program. When asked about the most difficult aspect of their workshops, most said they were satisfied with the way their workshop was conducted. Three respondents mentioned difficulties, but two of these respondents felt they had received enough training during the year to adequately address these issues.

Nine of the ten respondents reported being able to completely integrate reading and arts activities, in part because of very adequate staff training. The most frequently mentioned strengths of their training included increased knowledge of current education and reading theories, and shared ideas and materials.

Figure 8

Borough Sites Staff Development Highlights: 1989-90

| Bronx | Brooklyn | Queens |
|---|---|---|
| • Discussed Course of Study: Images of New York: Past, Present and Future<br>• Shadow Puppetry<br>• Teachers As Decision Makers<br>• Silent Reading<br>• Personification and Point of View<br>• Feelings As Expressed Through Reading and Art | • Reviewed New York State Regents Action Plan<br>• Discussed Brooklyn Center Theme: Immigration<br>• Reviewed Chinese Watercolor Fan Lesson<br>• Previewed "Scientific Definition of Music: The Brain's Perception"<br>• "Constructing Inter-disciplinary Arts and Culture Curriculum" Conference Report<br>• Viewed "Journey to America" Video<br>• Outlined Reading Project Related to Music Project "Dance Macabre" | • Discussed Theme and Course of Study: East, West and Beyond<br>• Sequence and Signal Words for Categorization<br>• Question Revision and Appropriateness<br>• Inferring Character Traits |

Figure 9

Manhattan Sites Staff Development Highlights: 1989-90

| P.S. 11 | P.S. 15 |
| --- | --- |
| • Integration of Social Studies Curriculum with Novels and Art<br>• Discuss L.T.R.T.A. Newsletter Submissions<br>• Exhibit and Conference Preparation<br>• Meeting Individual Student Needs<br>• Structural Analysis | • Discuss Theme: City Life<br>• Literature in the Dance Workshop<br>• Word Identification Techniques<br>• Structural Analysis<br>• Costume Creation for Performances |

The majority of respondents felt they benefited most from group training. The following suggestions were made to improve L.T.R.T.A. training:

- increase exposure to new ideas and ways to teach and motivate children;
- increase time with classroom teachers to explore needs of the art workshop; and
- increase on- and off-site training as applied to the school setting.

Besides using existing materials, L.T.R.T.A. staff create their own materials and/or redesign existing materials to apply to their workshops. All ten respondents found teacher-made materials to be very helpful in their workshops.

Classroom Teacher Survey

Of the seventeen classroom teachers who responded to the classroom teacher survey, seven sent students to the borough-wide site in the Bronx, and seven sent students to the borough-wide site in Queens. Three teachers from one of the two Manhattan school-based sites also responded.

Most of these teachers taught general education students, although four taught special education students and two taught bilingual students. Thirteen of the 17 respondents were first year participants in the L.T.R.T.A. program, while the other five had from two to six years experience. The majority of first year teachers were asked to participate in L.T.R.T.A., most often by their principals. One was asked to participate by a supervisor, and another was asked by an L.T.R.T.A. site

director. One teacher requested participation, and another two took over classes already participating in L.T.R.T.A.

More than half of the respondents participated in the L.T.R.T.A. classroom teacher training at the beginning of the year. Of those who did not, four were not aware of the training and three were not present at the outset of the school year.

According to those teachers who responded to this question, most felt they received adequate training to participate in the program and cited the following as the most helpful and/or positive aspects of the training:

- activities that increased teachers' ability to integrate art and reading, especially in curriculum areas;
- learning about the use of materials, such as reading games;
- hands-on activities;
- discussion of the theme(s) for the year; and
- learning about the goals, philosophy, and structure of the program.

All but two teachers were able to incorporate L.T.R.T.A. topics into their general curriculum. Special L.T.R.T.A. projects extended into science and social studies areas in the classroom. For example, fish banners and prints made in the L.T.R.T.A. program were used in studies of sea life in the classroom.

The ongoing rapport and cooperation between classroom teachers and on site L.T.R.T.A. staff was described by nearly all respondents as good to excellent.

When asked to describe how program participation influenced student behavior and/or learning progress in the classroom, respondents cited:

- improvements in students' behavior including increased self-discipline, more focused attention on tasks, more cooperative behavior; and
- positive effects on learning progress, including improvements in reading test scores.

Suggestions for ways students might benefit more from program participation included teacher-determined follow-up for students, starting the program with self-portraits to give students a feeling of being special, and improved planning.

Most respondents were positive about participating in the L.T.R.T.A. program again, with many noting that it was helpful to the children in learning to read and gave them "a chance to feel special". Several said that children looked forward to the L.T.R.T.A. program, which carried over to positive effects on classroom teaching.

## III. STUDENT OUTCOMES

### ATTENDANCE

Depending on the type of student involved, the number of days of attendance in the Learning to Read Through the Arts program ranged from 28 to 56 days. Most general education and LEP students attended workshops two afternoons a week for a maximum of 56 four-hour sessions. General education and LEP students at the school-based sites and special education students attended workshops one full day each week for a maximum of 32 sessions. Overall, program students attended 85 percent of the sessions. The mean number of days absent was 6.4 days.

### METHODS USED TO EVALUATE STUDENT ACHIEVEMENT

The impact of the program on student achievement in reading and writing was determined by evaluating students' performance on standardized and criterion-referenced reading tests and holistically scored writing tests against the program objectives. Analyses of student achievement were conducted for full-year students with complete test information who participated in the program for five or more months.

The program objective for general education students on standardized reading tests--the Metropolitan Achievement Test (MAT) and the Degrees of Reading Power (D.R.P.) Test--was that they would achieve a statistically significant mean gain from pretest to posttest. On the Wisconsin Design Skills Development Test, LEP students were expected to master five additional reading skills and special education students were expected to

master three additional reading skills on the posttest that they had not mastered on the pretest. On the holistically scored writing tests, students were to achieve statistically significant mean gains from pretest to posttest.

Reading Tests of General Education Students

On the standardized reading tests, students' raw scores were organized by grade and converted to normal curve equivalents (N.C.E.s).* Students in grade three took the MAT in spring 1989 and the D.R.P. test in spring 1990. Scores on the D.R.P. (posttest) were converted to (pretest) MAT scores so that achievement could be measured.** However, since the MAT emphasizes basic skills and the D.R.P. emphasizes reading comprehension, the comparison may not be a good measure of student achievement.

Statistical analyses were carried out on the converted N.C.E. scores. Correlated t-tests were used to determine whether mean gains were statistically significant. Statistical significance indicates whether the changes in achievement are real or occur by chance. However, achieving statistically significant mean gains does not address the issue of whether the

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*Normal curve equivalent scores are similar to percentile ranks but, unlike percentile ranks, are based on an equal-interval scale ranging from 1 to 99, with a mean of 50 and a standard deviation of approximately of 21. Because N.C.E. scores are equally spaced, mathematical and statistical calculations such as averages are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

**The equi-percentile method was used. The frequency distributions of scores on the tests were employed to generate conversion tables, which were approved by the State Education Department.

mean gains are important to the students' educational development. Therefore, an effect size (E.S.)* is reported for each mean difference to indicate whether each mean gain or loss was educationally meaningful.

Reading Tests of LEP and Special Education Students

On the Wisconsin Design Skills Development Test, tallies were made of the number of reading skills mastered by each student on the pretest and posttest, and the number of additional skills mastered by each student on the posttest was calculated. Frequency distributions were performed to identify the number of special education students and the number of LEP students by grade and overall who mastered a specific, additional number of skills.

Writing Tests

Writing tests were organized by grade and holistically scored using a five-point scale that measures how well a student communicates. Test readers from the program staff were asked to pay special attention to the coherence of the passage, its sentence structure and sequence, and the writer's awareness of the audience. Each writing test was independently scored by two readers. A one point discrepancy between readers was acceptable. However, discrepancies of more than one point

*The effect size, developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement irrespective of the size of the sample. According to Cohen, .2 is a small effect size, .5 is a moderate effect size, and .8 is a large effect size. Only effect sizes of .8 and above are considered educationally meaningful.

required a third reader. The program reported that 98 percent of the cases did not need a third reader.

After the tests had been scored, correlated t-tests were used to determine statistical significance. Then, an effect size was calculated for each mean difference to indicate whether each mean gain or loss was educationally meaningful.

## ACADEMIC ACHIEVEMENT IN READING

### General Education Students

Table 3 presents data for third grade general education students on standardized reading tests. Students were pretested in spring 1989 on the MAT and posttested in spring 1990 on the D.R.P. D.R.P. scores were converted for comparison with MAT scores. Mean differences were calculated and measured against the program objective, a statistically significant mean gain. Table 3 shows that:

- Third grade students achieved a mean gain of 5.4 N.C.E.s. This mean gain represented a small effect size and was not statistically significant.

TABLE 3

Mean N.C.E. Differences of Full Year[a] Third Grade General Education Students in the L.T.R.T.A. Program on the Metropolitan Achievement Test: 1989-90

| Grade | N | Pretest Mean | Pretest S.D. | Posttest Mean | Posttest S.D. | Difference[a] Mean | Difference[a] S.D. | Effect Size |
|---|---|---|---|---|---|---|---|---|
| 3 | 21 | 40.2 | 14.1 | 45.6 | 18.8 | 5.4 | 12.9 | 0.4 |

[a]This mean difference was not statistically significant at the $p \leq .05$ level.

- Third grade students achieved a mean gain of 5.4 NCEs. This mean gain represented a small effect size and was not statistically significant.

Table 4 presents student achievement data for general education students in fourth, fifth, and sixth grades on the D.R.P. Students were pretested in spring 1989 and posttested in spring 1990. The new (1987-88) D.R.P. norms were used on the spring 1989 and spring 1990 test scores. Mean differences were calculated and measured against the program objective, a statistically significant mean gain. Table 4 shows that:

- The overall mean gain of 4.0 N.C.E.s was statistically significant. The overall effect size was small.
- Students in grades four, five, and six achieved statistically significant mean gains. Effect sizes for students in fifth and sixth grades were moderate.

Limited English Proficient Students

Table 5 presents student achievement data in reading for LEP students in second, third, fourth, fifth and sixth grade on the criterion-referenced Wisconsin Design Skills Development Test. Students were pretested in fall 1989 and posttested in spring 1990. Student achievement was measured against the program objective that 60 percent of LEP students would master at least five additional reading skills on the posttest that they had not mastered on the pretest. Table 4 shows that:

- More than 60 percent of LEP students in each grade except the third grade and almost 84 percent of all LEP students mastered five or more additional reading skills on the posttest.
- All second and fifth grade LEP students mastered five or more additional reading skills on the posttest.

TABLE 4

Mean N.C.E. Differences of Full Year[a] General Education Students by Grade in the L.T.R.T.A. Program on the Degrees of Reading Power Test: 1989-90

| Grade | N | Pretest Mean | Pretest S.D. | Posttest Mean | Posttest S.D. | Difference[a] Mean | Difference[a] S.D. | Effect Size |
|---|---|---|---|---|---|---|---|---|
| 4 | 210 | 35.1 | 17.5 | 37.9 | 19.3 | 2.8 | 13.2 | 0.2 |
| 5 | 205 | 39.0 | 13.6 | 44.0 | 17.4 | 5.0 | 14.1 | 0.4 |
| 6 | 36 | 43.0 | 16.6 | 49.8 | 16.1 | 6.2 | 11.5 | 0.5 |
| Total | 451 | 37.6 | 15.9 | 41.6 | 18.6 | 4.0 | 13.5 | 0.3 |

[a]These mean difference were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 4.0 N.C.E.s was statistically significant. The overall effect size was small.
- Students in grades four, five, and six achieved statistically significant mean gains. Effect sizes for students in fifth and sixth grades were moderate.

TABLE 5

Number and Percentage of Limited English Proficient Students by Grade in the L.T.R.T.A Program Mastering Five or More Additional Skills on the Wisconsin Design Skills Development Test: 1989-90

| Grade | Number of Students | Additional Reading Skills Mastered[a] Less than Five N | % | More than Five N | % |
|---|---|---|---|---|---|
| 2 | 2 | 0 | 0.0 | 2 | 100.0 |
| 3 | 5 | 3 | 60.0 | 2 | 40.0 |
| 4 | 13 | 2 | 15.4 | 11 | 84.6 |
| 5 | 14 | 0 | 0.0 | 14 | 100.0 |
| 6 | 3 | 1 | 33.0 | 2 | 66.0 |
| Total | 37 | 6 | 16.2 | 31 | 83.8 |

[a]The program objective was that 60 percent of LEP students would master at lease five additional reading skills on the posttest that they had not mastered on the pretest.

- More than 60 percent of LEP students in each grade except the third grade and almost 84 percent of all LEP students mastered five or more additional reading skills on the posttest.
- All second and fifth grade LEP students mastered five or more additional reading skills on the posttest.

Special Education Students

Table 6 presents student achievement data in reading for special education students on the criterion-referenced Wisconsin Design Skills Development Test. Students were pretested in fall 1989 and posttested in spring 1990. Student achievement was measured against the program objective that 60 percent of the special education students would master at least three additional reading skills on the posttest that they had not mastered on the pretest. Table 5 shows that:

- Almost 76 percent of special education students mastered three or more additional reading skills on the posttest.

Comparison of Reading Achievement Over Four School Years

Table 7 presents student achievement data for general education students on the D.R.P. over the last four school years, 1986-87 through 1989-90. Students were pretested in the spring of the previous year and posttested in the spring of the current academic year. For example, in the 1989-90 school year, students were pretested in spring 1989 and posttested in spring 1990. The new (1987-88) D.R.P. norms were used on the pretest and posttest beginning with the 1988-89 school year test scores. Mean differences were calculated and measured against the program objective, a statistically significant mean gain. Table 6 shows that:

- Mean N.C.E. gains for each year were statistically significant.

TABLE 6

Number and Percentage of Special Education Students in the L.T.R.T.A. Program Mastering Three or More Additional Reading Skills on the Wisconsin Design Skills Development Test: 1989-90[a]

| Number of Additional Skills Mastered | Number of Students | Percentage of Students |
|---|---|---|
| Less than three | 24 | 24.5 |
| Three or more | 74 | 75.6 |
| Total | 98 | 100% |

[a]The program objective was that 60 percent of special education students would master at least three additional reading skills on the posttest that they had not mastered on the pretest.

- Almost 76 percent of special education students mastered three or more additional reading skills on the posttest.

TABLE 7

Mean N.C.E. Difference of General Education Students in the L.T.R.T.A. Program on the Degrees of Reading Power Test: 1986-87 through 1989-90

| Year | Grade | Number of Students | Mean N.C.E. Differences |
|---|---|---|---|
| 1986-87 | 4-5 | 343 | 13.1 |
| 1987-88 | 4-6 | 347 | 3.9 |
| 1988-89[b] | 4-6 | 389 | 9.9 |
| 1989-90 | 4-6 | 451 | 4.0 |

[a]Mean gains were statistically significant at the $p \leq .05$ level.

[b]The new (1987-88) D.R.P. norms were used on the pretest and posttest test scores.

- Mean N.C.E. gains for each year were statistically significant.

## ACADEMIC ACHIEVEMENT IN WRITING

### General Education Students

Table 8 presents student achievement data for general education students in grades two through six on holistically scored writing tests. Students were pretested in fall 1989 and posttested in spring 1990. Mean differences were calculated and measured against the program objective, a statistically significant mean gain. Table 8 shows that:

- The overall mean gain of 1.8 raw-score points was statistically significant and represented an educationally meaningful gain.
- Students in all grades achieved statistically significant mean gains. Effect sizes for all grades represented educationally meaningful gains.

### Limited English Proficient Students

Table 9 presents student achievement data for LEP students in grades two through six on holistically scored writing tests. Students were pretested in fall 1989 and posttested in spring 1990. Mean differences were calculated and measured against the program objective, a statistically significant mean gain. Table 8 shows that:

- The overall mean gain of 2.0 raw-score points was statistically significant. The overall effect size represented an educationally meaningful mean gain.
- Students in grades four and five achieved statistically significant mean gains. Effect sizes for these two grades represented educationally meaningful gains. The small number of students in grades two, three, and six did not allow a test for statistical significance or educational meaningfulness.

TABLE 8

Mean Raw Score Differences of General Education Students
by Grade in the L.T.R.T.A. Program
on the Holistically Scored Writing Test: 1989-90

| Grade | N | Pretest Mean | Pretest S.D. | Posttest Mean | Posttest S.D. | Difference[a] Mean | Difference[a] S.D. | Effect Size |
|---|---|---|---|---|---|---|---|---|
| 2 | 42 | 1.4 | 0.9 | 4.1 | 1.3 | 2.7 | 1.2 | 2.3 |
| 3 | 23 | 2.3 | 0.6 | 3.7 | 0.7 | 1.4 | 0.7 | 2.0 |
| 4 | 219 | 2.4 | 1.2 | 4.2 | 1.3 | 1.8 | 1.2 | 1.5 |
| 5 | 227 | 2.7 | 1.1 | 4.3 | 1.4 | 1.6 | 1.1 | 1.5 |
| 6 | 37 | 3.3 | 1.2 | 5.4 | 1.4 | 2.1 | 0.6 | 3.5 |
| Total | 548 | 2.5 | 1.2 | 4.3 | 1.4 | 1.8 | 1.2 | 1.5 |

[a]These mean difference were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 1.8 raw-score was statistically significant. The overall effect size represented an educationally meaningful gain.
- Students in all grades achieved statistically significant mean gains. Effect sizes for all grades represented educationally meaningful gains.

TABLE 9

Mean Raw Score Differences of Limited English Proficient Students by Grade in the L.T.R.T.A. Program on the Holistically Scored Writing Test: 1989-90

| Grade | N | Pretest Mean | Pretest S.D. | Posttest Mean | Posttest S.D. | Difference[a] Mean | Difference[a] S.D. | Effect Size |
|---|---|---|---|---|---|---|---|---|
| 2 | 2 | 1.5 | 2.1 | 3.0 | 1.4 | 1.5 | 0.7 | N/A |
| 3 | 2 | 2.0 | 0.0 | 2.5 | 0.7 | 0.5 | 0.7 | N/A |
| 4 | 11 | 1.3 | 1.7 | 3.1 | 1.5 | 1.8[a] | 1.0 | 1.8 |
| 5 | 10 | 1.0 | 0.9 | 3.6 | 2.0 | 2.6[a] | 1.6 | 1.6 |
| 6 | 2 | 0.0 | 0.0 | 2.0 | 0.0 | 2.0 | 0.0 | N/A |
| Total | 27 | 1.1 | 1.3 | 3.1 | 1.6 | 2.0[a] | 1.3 | 1.5 |

[a]These mean differences were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 2.0 raw-score was statistically significant. The overall effect size represented an educationally meaningful gain.
- Students in grades four and five achieved statistically significant mean gains. Effect sizes for these two grades represented educationally meaningful gains. The small number of students in grades two, three, and six did not allow a test for statistical significance or educational meaningfulness.

Special Education Students

Table 10 presents student achievement data for special education students on holistically scored writing tests. Students were pretested in fall 1989 and posttested in spring 1990. Mean differences were calculated and measured against the program objective, a statistically significant mean gain. Table 9 shows that special education students made a statistically significant mean raw-score gain of 1.9 points, which was educationally meaningful.

TABLE 10

Mean Raw Score Differences of Special Education Students
in the L.T.R.T.A. Program
on the Holistically Scored Writing Test: 1989-90

| Grade | N | Pretest Mean | Pretest S.D. | Posttest Mean | Posttest S.D. | Difference[a] Mean | Difference[a] S.D. | Effect Size |
|---|---|---|---|---|---|---|---|---|
| Ungraded[b] | 21 | 0.9 | 1.0 | 2.8 | 1.1 | 1.9 | 0.8 | 2.4 |

[a]This mean difference was statistically significant at the $p \leq .05$ level.
[b]Special education students are not placed by grade.

- Special education students made a statistically significant mean raw-score gain of 1.9 points which was educationally meaningful.

## IV. CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSIONS

L.T.R.T.A. is an established, well defined program which has evolved into a sophisticated, collegial, team approach to providing reading and arts instruction. The boroughwide centers provide an opportunity for children to enter a new environment and feel special, a departure from the often negative image of compensatory education programs. Participating students at the school-based sites similarly feel special and, in addition, L.T.R.T.A. has an effect on all school staff and therefore all students in the building.

The review of program documents, observation of program activities, and interviews with program and participating school staff indicated that L.T.R.T.A. was implemented as proposed, and was well organized and effective in all program sites. Program staff were observed to be professional and collegial, and students were engaged and enthusiastic.

The evaluation of student achievement on reading and writing tests reveals that all program objectives for student improvement in reading and writing were met or surpassed, except for the performance of third grade students in the general education curriculum on the Metropolitan Achievement Test (MAT).

Standardized Reading Tests

General education students in all grades except grade three made statistically significant mean gains from pretest to posttest on standardized reading tests, meeting the program objective. It must be noted that for general education students in third, fourth, and sixth grades, all mean pretest scores were above the State Education Department's 35.8 N.C.E. threshold for educationally disadvantaged students.

Wisconsin Design Skills Development Test

On the Wisconsin Design Skills Development Test, 76 percent of special education students mastered three or more additional reading skills on the posttest that they had not mastered on the pretest, and 84 percent of LEP students mastered five or more additional reading skills. Thus, the program surpassed its objectives for reading achievement for special education and LEP students.

Holistic Writing Test

On the holistically scored writing tests, special education students and general education students in all grades made statistically significant mean gains and thus met the program objectives. These gains represented large effect sizes and were educationally meaningful. The overall mean gains for LEP students was statistically significant and educationally meaningful.

## RECOMMENDATIONS

L.T.R.T.A. has benefited from successive program evaluations since its inception, and test score gains are consistently positive in student achievement. The following recommendations are suggested to further refine the program's components, to improve program operations, and to highlight new areas of evaluation and research inquiry.

- The program should continue its innovative curriculum of integrating reading and the arts and expand, if possible, to serve an even larger population of students.
- A year-to-year sustained effects study of program participants should be instituted. A follow-up study of program impact on student self esteem should be considered.
- An in-depth analysis to identify the impact of arts education on student achievement and student self-esteem appears warranted.
- The issue of non-annualized staff may warrant continued exploration.
- L.T.R.T.A. staff should work with participating schools to develop ways of selecting general education students who better meet the Chapter I eligibility requirements.